

Clean Set Of Pending Claims

What is claimed is:

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1. A method of monitoring a patient, comprising the steps of:

placing a pressure pad that is encased in a cover on a resting place for the patient;

energizing the pressure pad, whereby a signal is provided responsive to pressure above a predetermined pressure being placed on the pressure pad by the patient;

applying pressure above said predetermined pressure to the pressure pad;

removing said pressure above said predetermined pressure;

arming the pressure pad when said pressure above said predetermined pressure is on the pressure pad whereby the pressure pad serves as a sensor;

activating an alarm when the pressure above said predetermined pressure has been on the pressure pad for a predetermined time and is removed from the armed pressure pad;

preventing at least one of said step of arming the pressure pad and said step of activating an alarm when at least one of said step of applying pressure above said predetermined pressure and said step of removing said pressure above said predetermined pressure are separated in time by more than a preset period of time; and

disposing of the pressure pad when the patient no longer has use of the pressure pad without permitting use by another patient.

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2. A method according to claim 1 wherein the pressure pad is a first sensor and a second sensor is placed in juxtaposition with the patient so that when the patient assumes a dangerous position as indicated by the second sensor an alarm signal is given, a monitoring station is activated when the alarm signal is provided, and a voice message is announced near the patient.

3. A method in accordance with claim 1 wherein an alarm is provided to a caretaker.

4. A method in accordance with claim 1 wherein the alarm is near the patient.

5. A method in accordance with claim 1 wherein the alarm is at a remote station.

6. A method of monitoring a patient in accordance with claim 1 wherein the cover is plastic and is torn when the pressure pad is to be disposed of.

7. A method of monitoring a patient, comprising the steps of:
placing a pressure pad under the patient that activates a first switch when energized;

attaching a fastener to the patient, wherein if the patient moves beyond a predetermined distance, a second switch moves between one of an open state or a closed state to the other of the open or closed state; and

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providing an alarm signal when either the first switch or the second switch is activated wherein the pressure pad is activated by removal of pressure and reset by application of pressure.

8. A method in accordance with claim 7 wherein the fastener is attached to clothing of the patient.

9. A method in accordance with claim 7 further including the step of providing a verbal message to the patient.

10. A method in accordance with claim 7 further including the step of transmitting a signal to a remote station and providing an alarm to a caretaker at the remote station.

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11. Apparatus for monitoring a patient, comprising:
a pressure pad for providing a signal indicating a pressure condition;
a control housing connected to and located adjacent to the pressure pad and responsive to the signal; and
a casing at least partly encasing the control housing and the pressure pad.

12. Apparatus for monitoring a patient in accordance with claim 11 in which the pressure pad is activated by removal of pressure and inactivated by application of pressure.

13. Apparatus in accordance with claim 11 further including a recorded voice message sounding within hearing distance of the patient.

14. Apparatus in accordance with claim 11 wherein the pressure pad responds to pressure by reducing electrical resistance between a first point and a second point, said apparatus including a switch armed upon the reduction of electrical resistance and an alarm for providing the alarm when the switch has been armed and the electrical resistance is under a predetermined resistance threshold for more than 1 second, wherein a movement of the patient from the pressure pad triggers the alarm.

15. A patient monitoring system according to claim 14 in which the alarm provides the alarm when the switch has been armed and electrical resistance is under the predetermined resistance threshold for a time between 2 seconds and 3 seconds in duration.

17. A pressure pad comprising:

a gel cushion;

an alarm system having a pressure switch and an alarm;

said pressure switch being in communication with said gel cushion, whereby pressure on the gel cushion results in pressure on the pressure switch;

said alarm being connected to said pressure switch to be controlled thereby;

the alarm system being armed upon pressure being placed on the pressure pad and

activated upon a release of the pressure; and

means for preventing at least one of the arming the alarm system and the activating of said alarm when the placing pressure more than a predetermined pressure and the release of said pressure are separated in time by more than a preset period of time.

18. A pressure pad according to claim 17 in which the alarm is a visible alarm.

19. A pressure pad according to claim 17 in which the alarm is an audible alarm.

20. A pressure pad according to claim 17 in which the pressure switch includes two conductors spaced by a flexible material that permits contact between the conductors under a predetermined amount of pressure; said pressure switch being located under said gel cushion wherein said pressure switch receives pressure from a patients weight above said gel cushion transmitted through said gel cushion.

21. A method according to claim 2 wherein the step of placing a second sensor in juxtaposition with the first sensor includes the substep of placing a mechanical switch in a position to be activated when the patient attempts to leave a location.

22. A method according to claim 2 wherein the step of placing a second sensor in juxtaposition with the first sensor includes the substep of placing a photoelectric sensor in a position to be activated when the patient attempts to leave a location.

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23. A method of monitoring a patient, comprising the steps of:
placing a pressure pad that is encased in a cover on a resting place for the patient;
energizing the pressure pad, whereby a signal is provided responsive to pressure
above a predetermined pressure being placed on the pressure pad by the patient;
applying pressure above said predetermined pressure to the pressure pad;
arming the pressure pad when said pressure above said predetermined pressure
is on the pressure pad whereby the pressure pad serves as a sensor;
activating an alarm when the pressure above said predetermined pressure has been
on the pressure pad for a predetermined time and is removed from the armed pressure pad
after said predetermined time; and

disposing of the pressure pad when the patient no longer has use of the pressure
pad without permitting use by another patient;

wherein the pressure pad is a first sensor and a second sensor is placed in
juxtaposition with the patient so that when the patient assumes a dangerous position as
indicated by the second sensor an alarm signal is given, a monitoring station is activated
when the alarm signal is provided, and a voice message is announced near the patient
wherein the step of placing said second sensor in juxtaposition with the first sensor
includes the substep of detecting the direction of motion of the patient.

24. A method of monitoring a patient, comprising the steps of:

placing a pressure pad that is encased in a cover on a resting place for the patient;

energizing the pressure pad, whereby a signal is provided responsive to pressure above a predetermined pressure being placed on the pressure pad by the patient;

applying pressure above said predetermined pressure to the pressure pad;

arming the pressure pad when said pressure above said predetermined pressure is on the pressure pad whereby the pressure pad serves as a sensor;

activating an alarm when the pressure above said predetermined pressure has been on the pressure pad for a predetermined time and is removed from the armed pressure pad after said predetermined time wherein an alarm is provided to a caretaker; and

disposing of the pressure pad when the patient no longer has use of the pressure pad without permitting use by another patient;

the step of activating the alarm when the pressure above the predetermined pressure is removed from the armed pressure pad after said predetermined time comprising the substeps of generating a signal upon arming of said pressure pad, transmitting said signal through a first path to a microprocessor wherein a flag is set in said microprocessor; transmitting said signal in a second path, delaying said signal in said second path in a delay line external to said microprocessor; applying said delayed signal from said second path to said microprocessor wherein said flag is removed; transmitting said alarm if said pressure above the predetermined pressure is removed from said pressure pad while said flag is present.

25. A method of monitoring a patient, comprising the steps of:

placing a pressure pad that is encased in a cover on a resting place for the patient;

energizing the pressure pad, whereby a signal is provided responsive to pressure above a predetermined pressure being placed on the pressure pad by the patient;

applying pressure above said predetermined pressure to the pressure pad;

arming the pressure pad when said pressure above said predetermined pressure is on the pressure pad whereby the pressure pad serves as a sensor;

activating an alarm when the pressure above said predetermined pressure has been on the pressure pad for a predetermined time and is removed from the armed pressure pad after said predetermined time wherein an alarm is provided to a caretaker; and

disposing of the pressure pad when the patient no longer has use of the pressure pad without permitting use by another patient;

the step of activating the alarm when the pressure above the predetermined pressure is removed from the armed pressure pad after said predetermined time comprising the substeps of causing a program in a microprocessor to set a flag upon arming of said pressure pad, causing said program to determine when said predetermined time has elapsed from the setting of said flag and transmitting said alarm if said pressure above said predetermined pressure is removed after said predetermined time.

26. An apparatus in accordance with claim 11 further including a second sensor wherein said second sensor is a mechanical switch located in a position to be activated when the patient attempts to leave a location.

27. An apparatus in accordance with claim 11 further including a second sensor wherein the second sensor is a photoelectric sensor located in a position to be activated when the patient attempts to leave a location.

28. Apparatus for monitoring a patient, comprising:
a pressure pad for providing a signal indicating a pressure condition;
a control housing connected to and located adjacent to the pressure pad and responsive to the signal;
a casing at least partly encasing the control housing and the pressure pad; and
a second sensor wherein means in the control housing responsive to said signal includes means responsive to a first sensor and the second sensor for detecting the direction of motion of the patient.

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29. Apparatus for monitoring a patient, comprising:
a pressure pad for providing a signal indicating a pressure condition;
a control housing connected to and located adjacent to the pressure pad and responsive to the signal;
a casing at least partly encasing the control housing and the pressure pad;
an alarm means at least partly within the casing; and
control means within the control housing for activating an alarm when a pressure above a predetermined pressure is removed from an armed pressure pad;
said control means comprising means for generating a signal upon arming of said

pressure pad, a microprocessor, means for transmitting said signal through a first path to said microprocessor wherein a flag is set in said microprocessor; means for transmitting said signal in a second path, means for delaying said signal in said second path in a delay line external to said microprocessor; and means for applying said delayed signal from said second path to said microprocessor wherein said flag is removed; transmitting an alarm if said pressure above the predetermined pressure is removed from said pressure pad while said flag is present.

30. Apparatus for monitoring a patient, comprising:

a pressure pad for providing a signal indicating a pressure condition;

a control housing connected to and located adjacent to the pressure pad and responsive to the signal;

a casing at least partly encasing the control housing and the pressure pad; and

a second sensor wherein means in the control housing responsive to said signal includes means responsive to a first sensor and the second sensor for detecting the direction of motion of the patient.

31. A pressure pad comprising:

a gel cushion;

an alarm system having a pressure switch and an alarm;

said pressure switch being in communication with said gel cushion, whereby pressure on the gel cushion results in pressure on the pressure switch;

said alarm being connected to said pressure switch to be controlled thereby;

the alarm system being armed upon pressure being placed on the pressure pad and activated upon a release of the pressure if said pressure is removed longer than a predetermined time after the alarm is activated; and

at least one tubular member communicating with gel within the gel cushion and with said pressure switch wherein force on the gel cushion results in force transmitted through the tubular member to the pressure switch.